

Evaluation of the

*Baseline Human Health Risk Assessment Report for the US
Department of Energy/National Nuclear Security Administration
Pantex Plant (March 2006)*

Executive Summary

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EXECUTIVE SUMMARY

Review of the Pantex Plant Human Health Risk Assessment

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The EHA review of the US Department of Energy/National Nuclear Security Administration (DOE/NNSA) Pantex facility Baseline Human Health Risk Assessment (BHHRA) finds that the report's greatest weakness is that it fails to present a site-wide risk assessment for the facility. Rather, it is primarily a combination of material presented in the work plan and a summary of individual site-specific human health risk assessments (HHRA).

It appears that the authors of the Pantex facility BHHRA have presumed that onsite exposures would occur only within single zones and that no workers would spend time in more than one zone. There is a site-wide assessment of contaminants migrating to the groundwater, leading to offsite exposures. *Some explicit framing statements to this effect, if this is in fact the strategy used by the authors of the Pantex BHHRA, should be included in the document.*

A major concern with the Pantex BHHRA arises in regard to identification of contaminants of potential concern (COPCs) and of exposure point concentrations (EPCs). This concern arises because:

- The information on contaminant levels is not readily available in the BHHRA although it can be tracked down in some supporting material.
- The use of an upper 95% tolerance interval (effectively the maximum level measured) to identify backgrounds also leads to excessive exclusion of contaminants from the Pantex list of COPCs.
- Earlier STAND reviews of the Pantex data and analytical approaches have consistently pointed to problems with the contaminant measurements.
- The tiered strategy used to eliminate contaminants from further analysis neglects exposures to the same contaminant from multiple zones. This neglect will result in estimated risks lower than actual risks.
- Finally, removal of contaminants before calculating an HI by the authors of the Pantex facility BHHRA may result in estimated risks to workers and community members that are lower than actual risks.

An oversight of particular concern in the Pantex BHHRA is the failure to evaluate the offsite residential receptor. This receptor was explicitly requested in the meeting between TCEQ and Pantex on September 10, 2002 and is cited as a ‘change agreement’ in the minutes from that meeting. The receptor is included in the BHHRA conceptual model but excluded from further analysis *although a number of exposure pathways are complete.*

There are repeated references to a ‘qualitative’ evaluation of the offsite residential receptor and statements that this receptor will be discussed in the uncertainties analyses; however, *neither of these actions appear to have been done.*

The goal of an effective BHHRA is to provide the reader – whether a regulator, concerned community member, or a reviewer – with a clear and transparent picture of the process used in presenting the risk information. Failure to do so hinders the reader’s ability to evaluate and concur with the conclusions. It creates distrust and leaves the impression that the document authors are contemptuous of their audience, fail to understand the process sufficiently to communicate it themselves, or are actively attempting to cloud or hide information.

The Pantex BHHRA lacks documentation of the assumptions and logic for the decisions made in the presentation of the risk assessment. **As it stands, the Pantex BHHRA is not adequate for responsible decision-making concerning risks to human health.**

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